REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1, 2, 5-12, 15, 17-31, 33, and 34 are pending in the present amendment. Claim 34 is added, Claims 3, 4, 13, 14, 16, and 32 are canceled, and Claims 1, 2, 5-10, 12, 13, 15, 17-19, 21, 24-26, 29-31, and 33 are amended by the present response. Support for amendments to the claims can be found in the disclosure as originally filed. Thus, no new matter is added.

In the outstanding Office Action, the title was objected to; Claims 1-2, 14, 16-20, 32, and 33 were rejected under 35 U.S.C. §102(e) as anticipated by Rosenthal et al. (U.S. Pat. No 6,985,294, herein Rosenthal '294); Claims 3, 4, 12, and 13 were rejected under 35 U.S.C. §102(e) as anticipated by Rosenthal et al. (U.S. Pat. No 7,437,000, herein Rosenthal '000); Claim 5 was rejected under 35 U.S.C. §103(a) as unpatentable over Rosenthal '000; Claim 15 was rejected under 35 U.S.C. §103(a) as unpatentable over Rosenthal '000; Claim 31 was rejected under 35 U.S.C. §103(a) as unpatentable over Rosenthal '294 in view of Raskar et al. (U.S. Pat. No. 6,715,888, herein Raskar); and Claims 6-11 and 21-30 were objected to as being dependent upon a rejected base claim, but otherwise allowable if rewritten in independent form to include all the features of the base claims.

Initially Applicants and Applicants' representatives wish to thank Examiner Villecco for the interview with Applicants' representatives on April 6, 2009. During the interview, the claimed invention and differences between the claimed invention and the references in the outstanding Office Action were discussed in detail. The arguments discussed and amendments suggested during the interview are reiterated below.

Applicants acknowledge with appreciation the indication of allowable subject matter in Claims 6-11 and 21-30. In light of this indication, Claims 6 and 21 are amended to be in independent form.

With regard to the objection to the title, a new title is presented. Accordingly, Applicants respectfully request that the objection to the title be withdrawn.

With regard to the rejection of Claims 1-2, 14, 16-20, 32, and 33 under 35 U.S.C. §102(e) as anticipated by Rosenthal '294, Applicants respectfully traverse this rejection. Rosenthal '294 does not disclose or suggest the claimed "a first dividing means for dividing an optical image of an object into a first spectrum" and "a second dividing means for dividing white light into a second spectrum."

Fig. 1 of Rosenthal '294 describes a system comprising a light source, light modulator and projector, where element 5 is a diffraction grating.[1] Further, Rosenthal '294 describes that a light source transmits full continuous-spectrum light through the diffraction grating.[2] Rosenthal '294 describes that this light source may be a femto-second laser or a conventional quartz halogen lamp.[3]

In contrast to Claim 1, Rosenthal '294 describes only the use of a single diffraction grating where light is transmitted from a single full spectrum light source. Thus, Rosenthal '294 does not describe that light is transmitted from *an optical image* and divided by a first dividing means and that light is transmitted from *white light* and divided by a second dividing means.

Incorporated by reference into Rosenthal '294, Rosenthal '000 describes a proof-of-principle full-spectrum color prototype using a collimated fiber bundle of individual fibers and array of diffraction grating spectrophotometers which are connected to a computer. [4]

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[1] *See* Rosenthal '294 Fig 1.
[2] *See* Rosenthal '294 Col. 5, lines 16-17.
[3] *See* Rosenthal '294 Col. 5, lines 7-10.
[4] *See* Rosenthal '000 Col. 3, line 8-29.

The computer then compiles and sums the spectral radiance information from each pixel and analyzes the spectral energy function signature for each pixel of the image which.[5] Moreover Rosenthal '000 describes how to create a two-dimensional image where the array of spectrometers are scanned pixel by pixel, line by line for a full frame.[6] Fig. 1 of Rosenthal '000 describes a color detecting pixel element, where element 14 is a diffraction grating and element 16 is an electrical photosensitive line array element.[7] Rosenthal '000 describes that the electrical photosensitive line array element is for detecting the spectrum of a scene that is focused by a lens through the diffraction grating.[8]

In contrast to Claim 1, Rosenthal '000 describes an electrical photosensitive line array element for detecting the spectrum of a scene that is focused by a lens. However, Rosenthal '000 describes only the use of this single diffraction grating. Thus, Rosenthal '000 does not describe that light is transmitted from *an optical image* and divided by a first dividing means and that light is transmitted from *white light* and divided by a second dividing means.

The outstanding Office Action relies upon element 5, Fig. 1 and Col. 3, lines 63-67 in Rosenthal '294 to describe the first dividing means and on elements 14 and 16, Fig. 1 in Rosenthal '000 to describe the second dividing means. However, there is no embodiment described in the Rosenthal '294 or Rosenthal '000 references that has an image processing system with a first dividing means and a second dividing means as recited in Claim 1. To cure this, the outstanding Office Action improperly combined elements of two different embodiments to try to reassemble the claimed invention based on hindsight. Two different devices, each with one diffraction grating, does not anticipate a device with a first and a second dividing means.

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[5] *Id.*
[6] *See* Rosenthal '000 Col. 3, line 30-33.
[7] *See* Rosenthal '000 Fig 1.
[8] *See* Rosenthal '000 Col. 2, line 37-39.

MPEP § 2131 notes that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."[9] Further, establishing an anticipation rejection requires that the citation of a single prior art reference that discloses each and every element *arranged together exactly as in the claimed arrangement.*[10]

In contrast to Claim 1, Rosenthal '294 describes only the use of a single diffraction grating where light is transmitted from a single full spectrum light source. Thus, Rosenthal '294 does not describe that light is transmitted from *an optical image* and divided by a first dividing means as recited in Claim 1. Incorporating Rosenthal '000 by reference still does not expressly or inherently describe all of the features recited in Claim 1 as required by MPEP § 2131 (i.e., arranged together exactly as in the claimed arrangement). Rosenthal '000 describes an electrical photosensitive line array element for detecting the spectrum of a scene that is focused by a lens. However, Rosenthal '000 describes only the use of this single diffraction grating. Consequently, Rosenthal '000 does not describe a second dividing means for dividing white light into a spectrum as recited in Claim 1.

Further, Rosenthal '294 can not be combined with Rosenthal '000 to render Claim 1 obvious to a person of ordinary skill in the art. The Rosenthal '000 reference fails to describe both an "extracting means for extracting, from the second spectrum generated by the second dividing means, spectrum portions based on the image data detected by the detecting means" and a " synthesizing means for synthesizing the spectrum portions extracted by the extracting means". Rather, Rosenthal '000 simply describes in a single paragraph that Fig. 3 illustrates how someone experienced in the art could construct a proof-of-principle full-spectrum color prototype. Further, Rosenthal '294 does not describe inputting from "a first dividing means

[9] Citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).
[10] *See* In re Bond, 15 USPQ2d 1566 (Fed. Cir. 1990); Lindemann Maschinen Fabrik GMBH v. American Hoist & Derrick Co., 221 USPQ 481 (Fed. Cir. 1984); Ex parte Gould, 6 USPQ2d 1680 (Bd. Pat. App. & Int. 1987); and Ex parte Osmond, 191 USPQ 334 (Bd. Pat. App. & Int. 1973)).

for dividing an optical image of an object into a first spectrum" as recited in Claim 1 to modulate light output from the full spectrum source.

In view of the above-noted distinctions, Applicants respectfully submit that Claim 1 (and any claims dependent thereform) patentably distinguish over Rosenthal '294. Claims 1-3, 13, 14, 32, and 33 recite elements analogous to those of Claim 1. With respect to the further cited references, Applicants respectfully submit that the further cited Raskar and Rosenthal '000 references are not believed to overcome the above-noted deficiencies of Rosenthal '294. Thus, Applicants respectfully submit that Claims 2 and 33 at least patentable distinguishes over Rosenthal '294 for at least the reasons stated for Claim 1.

Consequently, in light of the above discussion the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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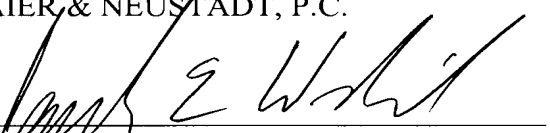

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